What is claimed is:

1. A control system for controlling data flow over data paths on a data-packet-network according to specific destinations known in the network comprising:

a network monitoring system for monitoring network performance parameters;

a network access system for accessing specific nodes in the network; and

a control software executable on the network access system for assigning and changing cost parameters at selected nodes in the network;

characterized in that a network administrator monitoring the network or portion thereof uses the network access system and control software to assign and implement cost values at the selected nodes, the values associated individually with a specific destination or destinations, the values establishing forwarding costs to be incurred at the selected nodes, and link costs to be incurred per data link between the nodes such that manipulation of such cost value assignments enables load balancing of data traveling through the network.

2. The control system of claim 1 wherein the data-packet-network is the Internet network.

3. The control system of claim 1 wherein the network monitoring system is a computer station having network connectivity to the network or portion thereof being monitored.

4. The control system of claim 1 wherein the network access system is a computer station having connectivity to the network or portion thereof to be accessed.

5. The control system of claim 1 wherein the cost values are incorporated in a distributive algorithmic computation to compute shortest path to the associated destination.

6. The control system of claim 5 wherein the particular node assigned the particular cost values reports those values to all neighboring nodes up-line from the particular node.

7. The control system of claim 6 wherein the reported values are used in a distributive computation at the nodes to compute shortest path to a destination.

8. A method for altering the established course of a data path on a data-packet-network according to specific destination known in the network comprising steps of:

(a) accessing a particular node in the course of the data path toward the destination;

(b) delivering to the node at least one cost parameter specific to the destination to replace at least one existing cost parameter specific to the destination reported by the node;

(c) installing the at least one new parameter replacing the at least one old parameter; and

(d) reporting the at least one new parameter from the affected node to nodes neighboring the affected node such that data traffic routed to the specific destination assumes an altered route to the destination.

9. The method of claim 8 wherein the data-packet-network is the Internet network.

10. The method of claim 8 wherein in step (a) the node is a router accessed by a computer station having connectivity to the network or portion thereof to be accessed.

11. The method of claim 10 wherein in step (a) the router is accessed as a result of need established through network monitoring.

12. The method of claim 8 wherein in step (b) the at least one cost parameter is incorporated in a distributive algorithmic computation performed among the nodes to compute shortest path to the associated destination.

13. The method of claim 8 wherein in step (b) at least one cost parameter is a forwarding cost through the affected node and is set to a value of infinity.

14. The method of claim 8 wherein in step (b) at least one cost parameter is an output link cost associated with the particular destination.

15. The method of claim 8 wherein there are more than one cost parameter one being a forwarding cost and one being an output link cost, both costs associated with a particular destination.

16. The method of claim 8 wherein in step (c) installation is performed by software remotely.

17. The method of claim 8 wherein in step (d) reporting the at least one cost parameter to the neighboring nodes causes a complete bypass computation of the affected node particular to data routed to the stated destination.

18. The method of claim 8 wherein in step (d) reporting the at least one cost parameter to the neighboring nodes causes a maximal utilization of the affected node particular to data routed to the stated destination.

19. The method of claim 8 wherein in step (d) reporting the at least one cost parameter to the neighboring nodes causes a partial utilization of the affected node particular to data routed to the stated destination.

20. The control system of claim 1 wherein the assignment and implementation of cost values at routing nodes is pre-configured by the network administrator including provision and implementation of a table or tables containing optional forwarding costs per destination and at least one threshold value applicable to the physical link conditions as may be detected by the node wherein detection by the node of an occurrence of the at least one threshold value on any of the physical links triggers and automated reassignment of an appropriate forwarding cost per selected destination using the affected link from the table of optional forwarding costs.

21. The control system of claim 20 wherein the threshold value equates to general traffic load conditions over a physical link.

22. The control system of claim 21 wherein the reassigned forwarding costs triggered by occurrence of the threshold are computed along with other costs and advertised to neighbors pertinent to data flows containing a destination label or labels responsible for the preponderance of the load.

23. The control system of claim 1 wherein the data-packet-network is internal to a data router and the nodes are computerized network cards connected together to form the internal network of the node.

24. A method for automatic alteration of an established course of a data path on a data-packet-network according to specific destination known in the network comprising steps of:

(a) providing and implementing at a selected node in the data path a the table or tables containing optional forwarding costs per destination and at least one threshold value applicable to physical link conditions as they may detected by the node during operation;

(b) detecting at the selected node an occurrence of the at least one threshold value over one or more of the physical links;

(c) reassigning a forwarding cost or costs per destination or destinations as an automatic result of detection in step (b);

(d) computing the reassigned forwarding costs along with other costs of the affected links; and

(e) advertising the resulting cost values per destination to neighboring nodes utilizing the affected link or links.

25. The method of claim 24 wherein the data-packet-network is the Internet network.

26. The method of claim 24 wherein in step (a) the threshold value represents a general traffic load condition over a physical link.

27. The method of claim 24 wherein steps (b)-(e) are wholly automated and performed within the selected node.

28. The method of claim 24 wherein the data-packet-network is internal to a data router and the nodes are computerized network cards connected together to form the internal network of the router.